Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A helical antenna configured to broadcast a signal from an input line having shielding, comprising:
   a) a base plate, operatively interconnected to the shielding of the input line;
   b) a substantially solid dielectric rod, mounted on the base plate;
   c) a single, unidirectional conductive helix, ~~surrounding~~ wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
   d) a matching network, connected to the conductive helix, configured to match an impedance of the conductive helix with an impedance of the input signal.

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2. (original) A helical antenna as in claim 1, wherein the dielectric rod is an acetal resin rod.

3. (original) A helical antenna as in claim 1, wherein the base plate is a conductive base plate.

4. (canceled) ~~A helical antenna as in claim 3, wherein the base plate is a metal base plate.~~

5. (original) A helical antenna as in claim 3, wherein the base plate includes a plastic layer between the conductive base plate and the matching network.

6. (currently amended) A helical antenna as in claim 1, further comprising a dielectric enclosure attached to the base plate ~~that encloses~~ and enclosing the ~~antenna~~ dielectric rod, the conductive helix, and the matching network, wherein the dielectric enclosure enhances an output of the helical antenna ~~output~~.

7. (currently amended) A helical antenna configured to broadcast a signal from an input line having a core and shielding, comprising:
   a) a conductive base plate, operatively interconnected to the shielding of the input line;

b) a substantially solid dielectric rod, mounted on the base plate;

c) a conductive helix, ~~mounted~~ wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and

d) a tapered strip line matching network, connected ~~to~~ between the core of the input line and the conductive helix, configured to match ~~the~~ an impedance of the conductive helix with ~~the~~ an impedance of the input line.

8. (currently amended) A helical antenna as in claim 7, wherein ~~the~~ a length of the tapered strip line matching network is ¼ of ~~the signal~~ a wavelength of the signal.

9. (currently amended) A helical antenna as in claim 7, wherein a ~~length~~ side of the tapered strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod.

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10. (currently amended) A helical antenna as in claim 7, wherein the tapered strip line matching network provides a substantially flat transmission response over a spectrum of frequencies

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11. (currently amended) A helical antenna as in claim 7, wherein the dielectric rod is of materials selected from the group consisting of ~~an~~ acetal resin, acrylic, and nylon ~~rod mounted on the base plate~~.

12. (currently amended) A directional antenna as in claim ~~13~~ 11, wherein the acetal resin dielectric rod is Delrin.

13. (canceled) ~~A directional antenna as in claim 7, wherein the dielectric rod is nylon~~.

14. (original) A directional antenna as in claim 7, wherein the number of turns of the conductive helix is selected from the group consisting of 5, 10 and 15 turns.

15. (currently amended) A directional antenna configured to broadcast a signal from an input line having a core and shielding, comprising:
    a) a conductive base plate, operatively interconnected to the shielding of the input line;
    b) ~~an~~ substantially solid, cylindrical dielectric rod, mounted on the base plate;
    c) a single, unidirectional conductive helix, ~~mounted on~~ wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
    d) a strip line matching network, attached ~~to~~ between the core of the input line and the conductive helix, which tapers from a maximum width at a ~~the~~ connection point on ~~a coaxial cable~~ the input line to a minimum width at a connection point with the conductive helix, wherein the matching network is configured to match ~~the~~ an impedance of the conductive helix with ~~the~~ an impedance of the input line.

16. (currently amended) A directional antenna as in claim 15, wherein ~~the~~ a length of the strip line matching network is ¼ of signal wavelength.

17. (currently amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod.

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18. (currently amended) A directional antenna as in claim 15, wherein the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod, and forms a triangularly shaped matching network.

19. (currently amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod, and forms a crescent shaped matching network.

20. (original) A directional antenna as in claim 15, wherein the strip line matching network tapers along a linear axis to form a matching network.

21. (currently amended) A directional antenna as in claim 15, wherein the strip line matching network tapers from a maximum width of approximately one radius of the dielectric rod ~~down~~ to a minimum width approximately equal to a diameter of wire forming the ~~helical antenna~~ helix.

22. (new) A helical antenna as in claim 7, wherein the matching network is substantially parallel to the base plate.

23. (new) A helical antenna as in claim 7, wherein the matching network is configured to match a higher impedance of the conductive helix with a lower impedance of the input line.

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24. (new) A helical antenna as in claim 7, wherein the conductive helix comprises a single, unidirectional helix.

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25. (new) A directional antenna as in claim 15, wherein the matching network is substantially parallel to the base plate.

26. (new) A directional antenna as in claim 15, wherein the matching network is configured to match a higher impedance of the conductive helix with a lower impedance of the input line.